pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Application Type	**Amendment, Major**	Application No.	**PA0080039 A-1**
Facility Type	**Municipal**	APS ID	**15345**
Major / Minor	**Minor**	Authorization ID	**1362935**

Applicant and Facility Information

Applicant Name	**Carroll Valley Sewer & Water Authority**	Facility Name	**Carroll Valley STP**
Applicant Address	5685 Fairfield Road	Facility Address	Sanders Road
	Fairfield, PA 17320-9611		Carroll Valley, PA 17320-9611
Applicant Contact	David Hazlett	Facility Contact	Jed Fetter
Applicant Phone	(717) 642-8269	Facility Phone	(717) 642-5571
Client ID	73610	Site ID	252221
Ch 94 Load Status	Not Overloaded	Municipality	Carroll Valley Borough
Connection Status	No Limitations	County	Adams
Date Application Received	July 23, 2021	EPA Waived?	no
Date Application Accepted	July 30, 2021	If No, Reason	Chesapeake Bay TMDL-existing discharge proposing to expand
Purpose of Application	Expand WWTF: increasing annual average flow and hydraulic design capacity to 0.25 MGD and replacing the chlorine disinfection to UV system disinfection		

Summary of Review

WM. F. Hill & Assoc., Inc., on behalf of Carroll Valley Sewer & Water Authority, has applied to the Pennsylvania Department of Environmental Protection (DEP) for NPDES PA0080039 (which last reissuance was on February 24, 2020, became effective on March 1, 2020, and will expire on February 28, 2025) major amendment requests to construct and expand WWTF, to increase annual average design flow and hydraulic design capacity from 0.14 MGD to 0.25 MGD, and to replace the chlorine monitor & report requirement with UV light intensity (mW/cm^2) disinfection. The organic design capacity changed from 337 lbs BOD_5/day to 626 lbs BOD_5/day.

There are no open violations against the facility or permittee.

Planning for the proposed project was not required.

At the request of DEP, WQM No. 0121403 a permit amendment application also submitted by WM. F. Hill & Assoc., Inc. thru OnBase on July 23, 2021. Then, DEP has decided to review both NPDES & WQM amendment permits application simultaneously.

Expansion to existing facilities discharge to waters within the Chesapeake Bay watershed trigger nutrient cap loads in order to achieve the nutrient reduction required by the Chesapeake Bay Total Maximum Daily Load (TMDL).

Because construction cannot commence until a WQM permit is issued, this amended NPDES permit will carry forward the existing permit limits for an interim period, will include final permit limits based on the new design flow, and will include a compliance schedule in Part C. During the comment period, the permittee can request changes to the compliance schedule.

Based on the review, it is recommended that the NPDES permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days since this is a major amendment.

Approve	Deny	Signatures	Date
X		*Hilaryle* Hilary H. Le / Environmental Engineering Specialist	October 29, 2021
X		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	November 18, 2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.14 MGD inter 0.25 MGD Final
Latitude	39º 45' 35.79"	Longitude	-77º 22' 57.15"
Quad Name	Iron Springs	Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Toms Creek (CWF)	Stream Code	58685
NHD Com ID	53321454	RMI	3.11 miles (PA border)
Drainage Area	12.4 mi.^{2}	Yield (cfs/mi^2)	0.086
Q_{7-10} Flow (cfs)	1.07	Q_{7-10} Basis	
Elevation (ft)	544	Slope (ft/ft)	
Watershed No.	13-D	Chapter 93 Class.	CWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	PATHOGENS,		
Source(s) of Impairment	SOURCE UNKNOWN		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	City of Frederick, MD		
PWS Waters	Monocacy River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	Approximate 35 miles

Changes Since Last Permit Issuance:

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Carroll Valley - Main STP

WQM Permit No.	Issuance Date
0121403	Pending

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Chlorination to Ultraviolet	0.14 to 0.25

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.14 to 0.25	337 to 626	Not Overloaded	Aerobic Digestion	Other WWTP

The WWTP train before construction is as follows:

> Bar Screen (1) ⇒ EQ Tanks (6) ⇒ Aeration Tanks (14) ⇒ Clarifiers (2) ⇒ Chlorine Contact Tanks (2) ⇒ Post Aeration Lagoon (1) ⇒ Discharge

The facility incorporates the chemical addition of liquid sodium hypochlorite (for disinfection). Sludge holding tanks are on-site.

The WWTP train after construction will be as follows:

> Mechanical Screen (1) ⇒ SBRs (2) ⇒ Sludge Digestor/Holding (1) ⇒ Post Equalization Basin (1) ⇒ UV disinfection ⇒ Discharge

The facility incorporates the chemical addition of alum for precipitation of phosphorus.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.25 final
Latitude 39º 45' 35.98" **Longitude** -77º 22' 57.32"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

Ammonia (NH_3-N):
NH_3-N calculations are based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream NH_3-N criteria used in the attached WQM 7.0 computer model of the stream:

- Discharge pH = 7.0 (Default)
- Discharge Temperature = 25°C (Default)
- Stream pH = 7.0 (Default)
- Stream Temperature = 20ºC (Default)
- Background NH_3-N = 0 mg/L (Default)

The model input data and results are attached. The printout of the WQM 7.0 (ver. 1.1) output indicates that at a discharge of 0.25 MGD, limits (rounded according to the NPDES Technical Guidance 362-0400-001) of 8.4 mg/L NH_3-N as a monthly average and 16.8 mg/L NH_3-N instantaneous maximum are necessary to protect the aquatic life from toxicity effects. These limits are slightly more stringent than before complete of construction and will be in the amendment permit. Mass limits are calculated as follows:

Summer average monthly mass limit: 8.4 mg/L x 0.25 MGD x 8.34 = 17.5 lbs/day

The winter effluent limit will be set at three-times the summer limits; therefore, the average monthly winter limit for NH_3-N will be 25.0 mg/L. For the same reason, the instantaneous maximum limit for the winter season will be 50.0 mg/L. Recent DMRs and inspection reports indicate that these limits are being attained easily.

Winter average monthly mass limit: 17.5 lbs/day x 3 = 52.5 lbs/day

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit of 25.0 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. This limit is consistent with the before upgrade permit. Therefore, the limits of 25.0 mg/L monthly average (AML), 40.0 mg/l average weekly limit (AWL), and 50.0 mg/L instantaneous maximum will remain in the amendment permit. Mass limits are calculated as follows:

Average monthly mass limit: 25.0 mg/L x 0.25 MGD x 8.34 = 52.13 (52.0) lbs/day
Average weekly mass limit: 40.0 mg/L x 0.25 MGD x 8.34 = 83.4 (83.0) lbs/day

Total Suspended Solids (TSS):

The existing technology-based limits of 30.0 mg/L average monthly, 45.0 mg/L average weekly, and 60.0 mg/L instantaneous maximum will remain in the amendment permit based on the minimum level of effluent quality attainable by secondary treatment based on 25 Pa. Code § 92a.47. Mass limits are calculated as follows:

Average monthly mass limit: 30.0 mg/L x 0.25 MGD x 8.34 = 62.55 (63.0) lbs/day
Average weekly mass limit: 45.0 mg/L x 0.25 MGD x 8.34 = 93.83 (94.0) lbs/day

Dissolved Oxygen (D.O.):

The existing permit contains a limit of 5.0 mg/l for Dissolved Oxygen (D.O.). DEP's Technical Guidance for the Development and Specification of Effluent Limitations (362-0400-001, 10/97) suggests that either the adopted minimum stream D.O. criteria for the receiving stream or the effluent level determined through water quality modeling be used for the limit. Since the WQM 7.0 model was run using a minimum D.O. of 5.0 mg/l, this limit will be continued in the amendment permit with a daily monitoring requirement per DEP guidance.

pH:

The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa Code § 95.2(1).

Fecal Coliform:

The recent coliform guidance in 25 Pa. Code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100 ml and 25 Pa Code § 92a.47.(a)(5) requires a winter limit of 2,000/100 ml as a geometric mean and an instantaneous maximum not greater than 10,000/100 ml.

UV:

The UV system daily monitor and report the UV intensity (mW/cm^2) after update to replace chlorine disinfection to UV disinfection system will be in the amendment permit.

Chesapeake Bay Strategy:

The Department formulated a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). Sewage discharges have been prioritized by Central Office based on their delivered TN loadings to the Bay. The highest priority (Phases I, II, and III) dischargers will receive annual loading caps based on their design flow on August 29, 2005 and concentrations of 6.0 mg/L TN and 0.8 mg/L TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. Phase IV (0.2 - 0.4 MGD) will be required to monitor and report TN and TP during permit renewal monthly and Phase V (below 0.2 MGD) will monitor during current permit renewal once a year. However, any facility in Phases IV and V that undergoes expansion is subjected to cap load right away.

After finished construction, this plant is classified as a phase IV. For Phase IV sewage facilities (average annual design flow on August 29, 2005 ≥ 0.2 MGD and < 0.4 MGD), renewed or amended permits that include an increase in design flow will contain Cap Loads based on the lesser of a) existing TN and TP concentrations at current design average annual flow or b) 7,306 lbs./yr. TN and 974 lbs./yr. TP.

According to DMR reported as screen shot below which indicated the existing 2020's 19.91 mg/L TN & 3.8 mg/L TP concentrations at current design average annual flow 0.14 MGD; and calculated the mass limits as follows.

9/18/2018	Submitte	No	1	Yes	Final Effl	600	Total Nitrogen						mg/L		< 19.5	Monitor a	Annual Average			1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
10/7/2019	Submitte	No	1	Yes	Final Effl	600	Total Nitrogen						mg/L		< 29.9	Monitor a	Annual Average			1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
8/4/2020	Submitte	No	1	Yes	Final Effl	600	Total Nitrogen						mg/L		< 19.91	Monitor a	Annual Average			1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
9/18/2018	Submitte	No	1	Yes	Final Effl	51445	Total Nitrogen (T	lbs		4452	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
10/7/2019	Submitte	No	1	Yes	Final Effl	51445	Total Nitrogen (T	lbs		7646.75	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
8/4/2020	Submitte	No	1	Yes	Final Effl	51445	Total Nitrogen (T	lbs		4922.7	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
9/18/2018	Submitte	No	1	Yes	Final Effl	665	Total Phosphorus						mg/L		4.1	Monitor a	Annual Average			1/year	8-Hr Com	WRIGLESV	SCRO	Adams	Carroll Valley
10/7/2019	Submitte	No	1	Yes	Final Effl	665	Total Phosphorus						mg/L		4.3	Monitor a	Annual Average			1/year	8-Hr Com	WRIGLESV	SCRO	Adams	Carroll Valley
8/4/2020	Submitte	No	1	Yes	Final Effl	665	Total Phosphorus						mg/L		3.8	Monitor a	Annual Average			1/year	8-Hr Com	WRIGLESV	SCRO	Adams	Carroll Valley
9/18/2018	Submitte	No	1	Yes	Final Effl	51451	Total Phosphorus	lbs		936.06	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
10/7/2019	Submitte	No	1	Yes	Final Effl	51451	Total Phosphorus	lbs		1098.65	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley
8/4/2020	Submitte	No	1	Yes	Final Effl	51451	Total Phosphorus	lbs		939.54	Monitor a	Total Annual								1/year	Calculatio	WRIGLESV	SCRO	Adams	Carroll Valley

TN: 19.91 mg/L x 8.34 x 0.14 MGD x 365 days/year = 8,485.12 lbs/year

TP: 3.8 mg/L x 8.34 x 0.14 MGD x 365 days/year = 1,619.46 lbs/year

Since 7,306 lbs/yr TN and 974 lbs/yr TP are less than existing load, then these numbers will be placed in the amendment permit.

Influent BOD_5 and TSS Monitoring:

The amendment permit will continue influent BOD_5 and TSS weekly monitoring at the same frequency as is done for effluent in order to implement Chapter 94.12 and assess percent removal requirements, per DEP policy.

Additional Considerations

Flow Monitoring
The requirement to monitor the volume of effluent will remain in the amendment permit per 40 CFR § 122.44(i)(1)(ii).

Monitoring Frequency and Sample Type
The after-upgrade facility will collect weekly 8-hr composite effluent samples for $CBOD_5$, TSS, Fecal Coliform, Ammonia, and influent of TSS & BOD_5.

WQM 7.0

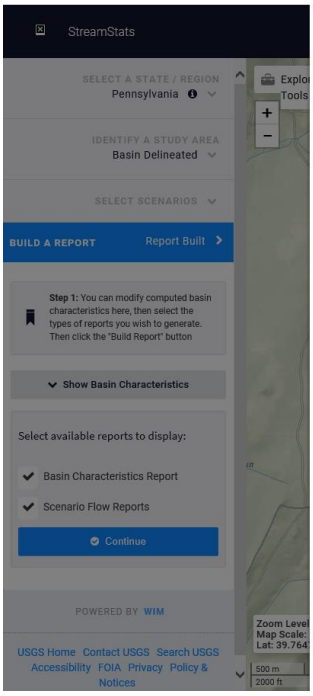
Two nodes were incorporated in the modeling effort.

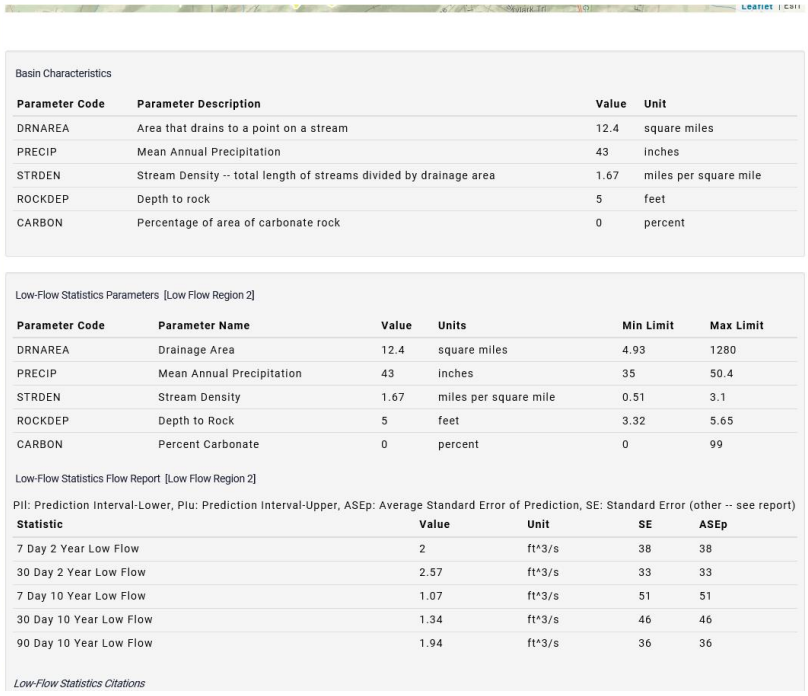
Node 1: Outfall 001 on Tom's Creek (58685)

Elevation:	544 ft (USGS National Map Viewer)
Drainage Area:	12.4 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	3.11 (PA DEP eMapPA)
Low Flow Yield:	0.086 $cfs/mi.^2$
Discharge Flow:	0.250 MGD (NPDES Application)

Node 2: Just before confluence with UNT 58767

Elevation:	498 ft (USGS National Map Viewer)
Drainage Area:	13.0 $mi.^2$ (USGS PA StreamStats)
River Mile Index:	2.29 (PA DEP eMapPA)
Low Flow Yield:	0.086 $cfs/mi.^2$
Discharge Flow:	0.000 MGD





Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	12.4	square miles
PRECIP	Mean Annual Precipitation	43	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.67	miles per square mile
ROCKDEP	Depth to rock	5	feet
CARBON	Percentage of area of carbonate rock	0	percent

Low-Flow Statistics Parameters [Low Flow Region 2]

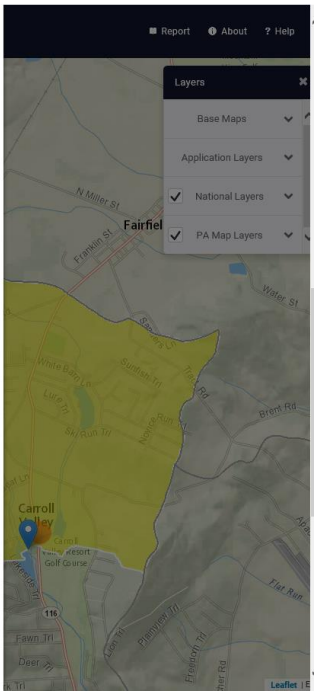
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	12.4	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	43	inches	35	50.4
STRDEN	Stream Density	1.67	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

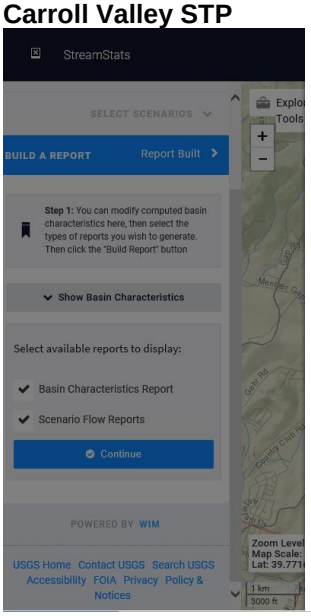
Low-Flow Statistics Flow Report [Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	2	ft^3/s	38	38
30 Day 2 Year Low Flow	2.57	ft^3/s	33	33
7 Day 10 Year Low Flow	1.07	ft^3/s	51	51
30 Day 10 Year Low Flow	1.34	ft^3/s	46	46
90 Day 10 Year Low Flow	1.94	ft^3/s	36	36

Low-Flow Statistics Citations





Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	13	square miles
PRECIP	Mean Annual Precipitation	43	inches
STRDEN	Stream Density -- total length of streams divided by drainage area	1.7	miles per square mile
ROCKDEP	Depth to rock	5	feet
CARBON	Percentage of area of carbonate rock	0	percent

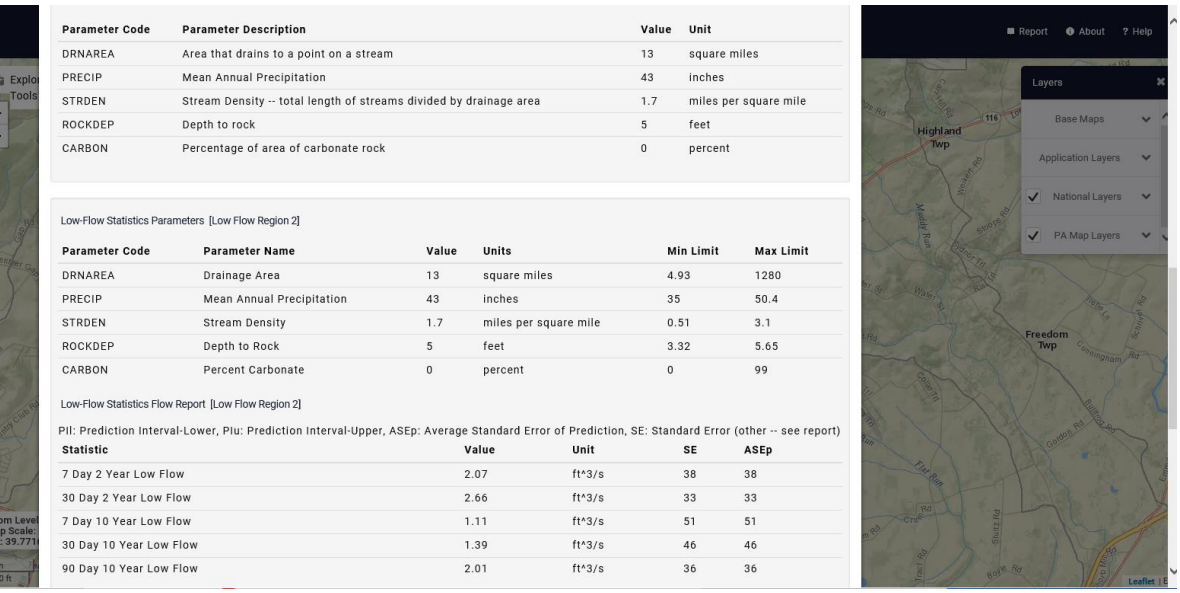
Low-Flow Statistics Parameters [Low Flow Region 2]

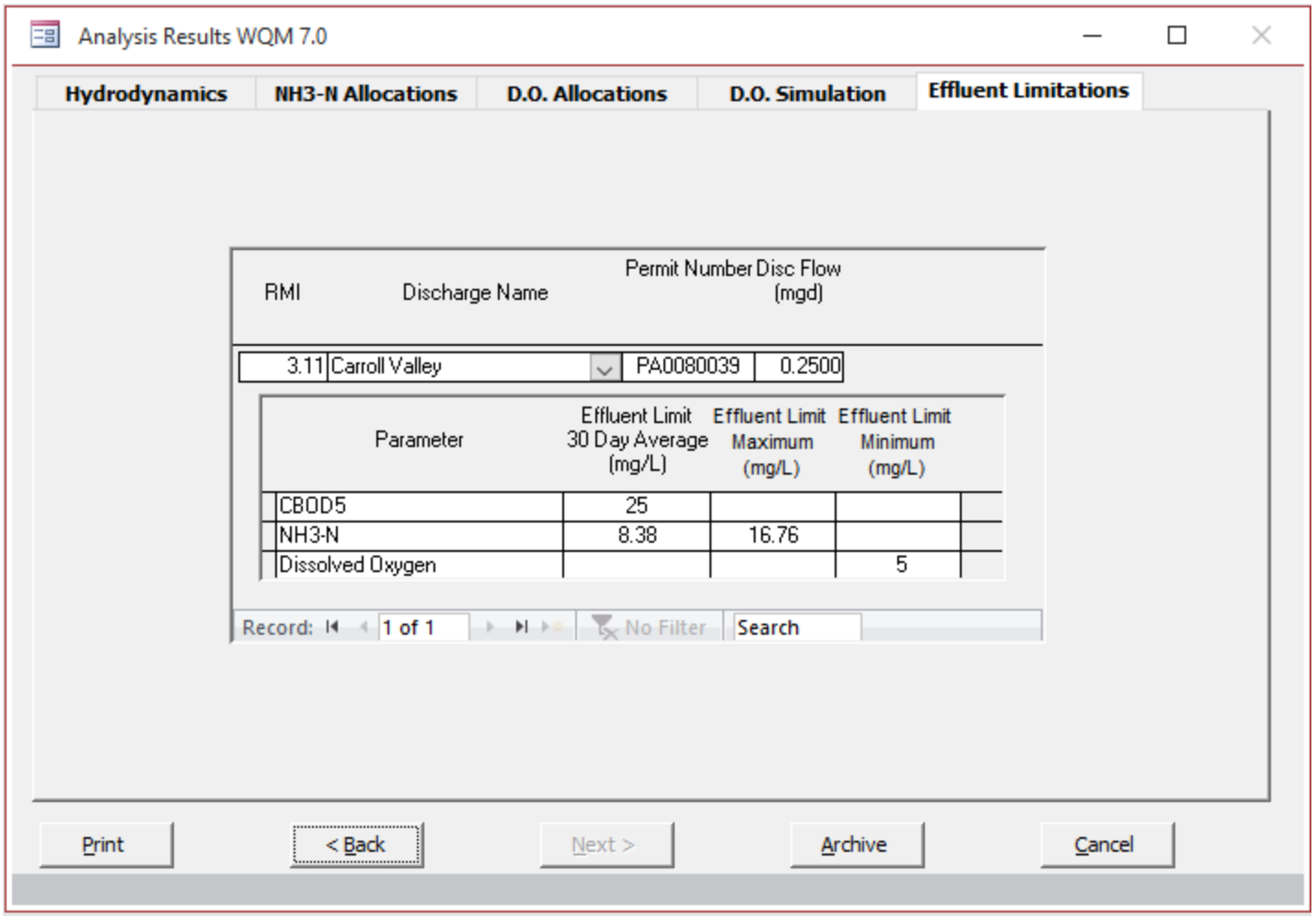
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	13	square miles	4.93	1280
PRECIP	Mean Annual Precipitation	43	inches	35	50.4
STRDEN	Stream Density	1.7	miles per square mile	0.51	3.1
ROCKDEP	Depth to Rock	5	feet	3.32	5.65
CARBON	Percent Carbonate	0	percent	0	99

Low-Flow Statistics Flow Report [Low Flow Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp
7 Day 2 Year Low Flow	2.07	ft^3/s	38	38
30 Day 2 Year Low Flow	2.66	ft^3/s	33	33
7 Day 10 Year Low Flow	1.11	ft^3/s	51	51
30 Day 10 Year Low Flow	1.39	ft^3/s	46	46
90 Day 10 Year Low Flow	2.01	ft^3/s	36	36





rptEffLimits

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
13D	58885	TOMS CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Eff. Limit 30-day Ave. (mg/L)	Eff. Limit Maximum (mg/L)	Eff. Limit Minimum (mg/L)
3.110	Carroll Valley	PA0080039	0.250	CBOD5	25		
				NH3-N	8.38	16.76	
				Dissolved Oxygen			5

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rpt_WLA

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
13D	58885	TOMS CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
3.110	Carroll Valley	14.43	39.89	14.43	39.89	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
3.110	Carroll Valley	1.76	8.38	1.76	8.38	1	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
3.11	Carroll Valley	25	25	8.38	8.38	5	5	0	0

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rptDOSim

WQM 7.0 D.O. Simulation

SWP Basin	Stream Code	Stream Name
13D	58885	TOMS CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
3.110	0.250	21.331	7.000
Reach Width (ft)	Reach Depth (ft)	Reach W/D Ratio	Reach Velocity (fps)
16.766	0.547	30.652	0.158
Reach CBOD5 (mg/L)	Reach Kr (1/days)	Reach NH3-N (mg/L)	Reach Kn (1/days)
8.12	1.167	2.23	0.775
Reach DO (mg/L)	Reach Kr (1/days)	Kr Equation	Reach DO Goal (mg/L)
7.380	16.510	Tsivoglou	6
Reach Travel Time (days)			
0.316			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.032	7.81	2.18	7.46
0.063	7.51	2.12	7.52
0.095	7.22	2.07	7.58
0.126	6.94	2.02	7.63
0.158	6.68	1.97	7.67
0.190	6.42	1.92	7.72
0.221	6.17	1.88	7.76
0.253	5.93	1.83	7.80
0.285	5.71	1.79	7.84
0.316	5.49	1.74	7.87

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rptModelSpecs

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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rptHydro

WQM 7.0 Hydrodynamic Outputs

SWP Basin: 13D | Stream Code: 68885 | Stream Name: TOMS CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
3.110	1.07	0.00	1.07	.3868	0.01062	.547	16.77	30.65	0.16	0.316	21.33	7.00
Q1-10 Flow												
3.110	0.68	0.00	0.68	.3868	0.01062	NA	NA	NA	0.13	0.376	21.81	7.00
Q30-10 Flow												
3.110	1.45	0.00	1.45	.3868	0.01062	NA	NA	NA	0.18	0.277	21.05	7.00

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rptGeneral

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	68885	TOMS CREEK	3.110	544.00	12.40	0.000000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	W/D Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.086	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Carroll Valley	PA0080039	0.2500	0.2500	0.2500	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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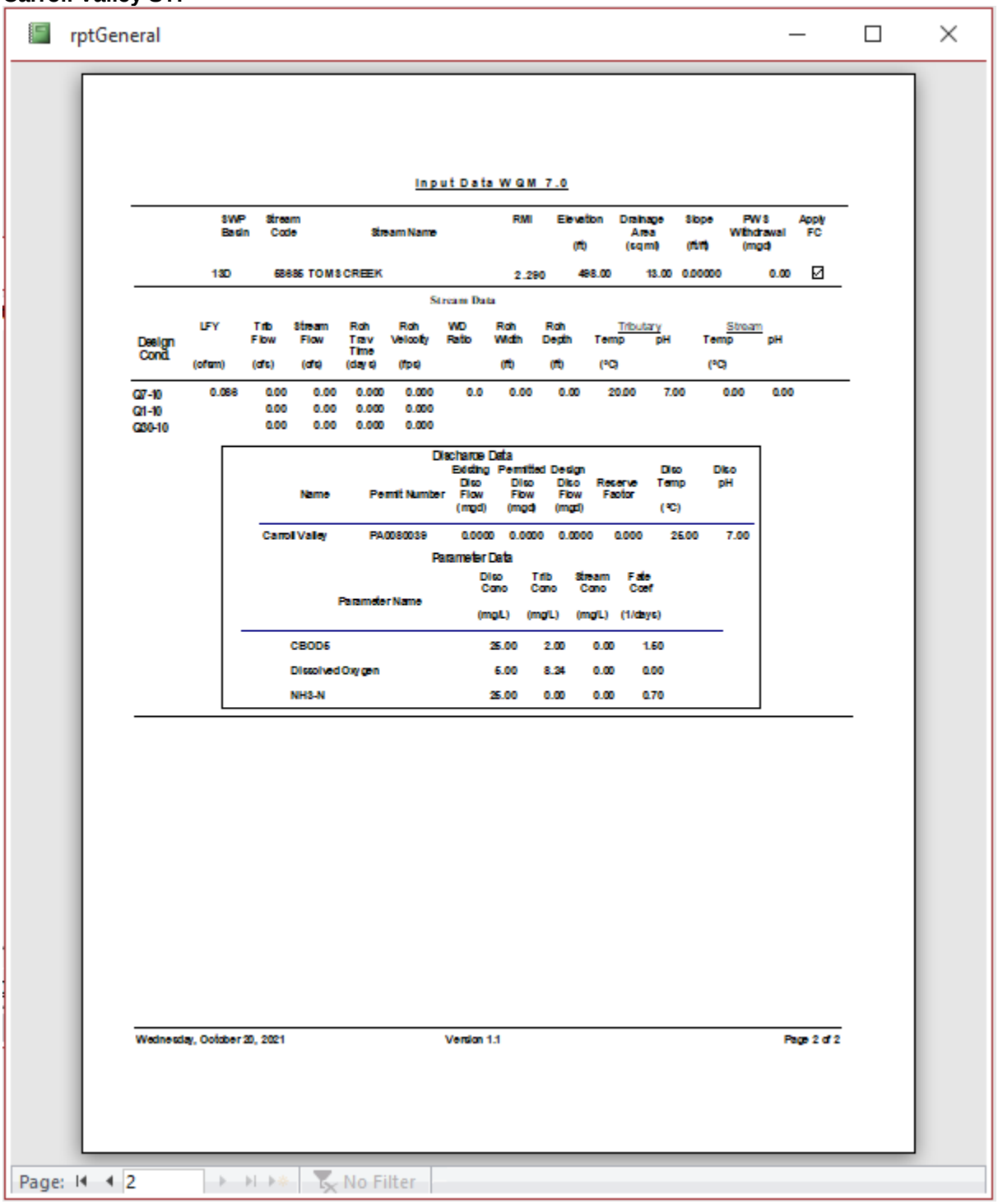

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
13D	68886	TOMS CREEK	2.290	488.00	13.00	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.088	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Carroll Valley	PA0080039	0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	6.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

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Proposed Effluent Limitations and Monitoring Requirements

Flow design before completion of construction: 0.14 MGD

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: March 1, 2020 through Completion of Construction.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
$CBOD_5$	29.0	46.0 Wkly Avg	XXX	25.0	40.0	50.0	2/month	8-Hr Composite
TSS	35.0	52.0 Wkly Avg	XXX	30.0	45.0	60.0	2/month	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Ammonia May 1 - Oct 31	9.9	XXX	XXX	8.5	XXX	17.0	2/month	8-Hr Composite
Ammonia Nov 1 - Apr 30	29.7	XXX	XXX	25.5	XXX	51.0	2/month	8-Hr Composite
Nitrate-Nitrite as N (lbs/year)	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Kjeldahl Nitrogen (lbs/year)	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite
Total Phosphorus (lbs/year)	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	8-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Nitrogen (lbs/year)	XXX	Report Total Annual	XXX	Report Annl Avg	XXX	XXX	1/year	Calculation

Proposed Effluent Limitations and Monitoring Requirements

After completion of construction Final flow design: 0.25 MGD

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Completion of Construction through February 28, 2025.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
D.O.	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Intensity (mW/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
$CBOD_5$	52.0	83.0 Wkly Avg	XXX	25.0	40.0	50.0	1/week	8-Hr Composite
TSS	63.0	94.0 Wkly Avg	XXX	30.0	45.0	60.0	1/week	8-Hr Composite
BOD_5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	1/week	Grab
Ammonia May 1 - Oct 31	17.5	XXX	XXX	8.4	XXX	16.8	1/week	8-Hr Composite
Ammonia Nov 1 - Apr 30	52.5	XXX	XXX	25.0	XXX	50.0	1/week	8-Hr Composite

Compliance Sampling Location:

Other Comments:

Proposed Effluent Limitations and Monitoring Requirements

Chesapeake Bay After completion of construction final flow design: 0.25 MGD

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Completion of Construction through February 28, 2025.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia--N	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Kjeldahl--N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	1/week	8-Hr Composite
Net Total Nitrogen	Report	7,306	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	974	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location:

Other Comments: